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Titan O-Rings Being Probed By Air Force

Explosion Cancels Defense Missions

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VANDENBERG AIR FORCE BASE, Calif., April 19—Air Force investigators are examining the possibility that faulty O-ring seals in solid-fuel booster rockets, thought to have caused the Challenger space shuttle disaster in January, also led to Friday's spectacular explosion of a Titan 34D missile shortly after launch, a civilian aerospace engineer familiar with the investigation said today.

Maj. Gen. Jack L. Watkins, commander of the 1st Strategic Aerospace Division, told a news conference here that the O-rings would be among a number of things considered by an Air Force panel investigating the mishap, but declined to say what investigators are focusing on.

Watkins indicated that the explosion will significantly delay further launches of the Titan 34D, which in the wake of the Challenger disaster was the only U.S. vehicle capable of carrying such heavy payloads as the $800 million KH11 photo reconnaissance satellite, which some experts said was aboard Friday.

The Air Force yesterday would not identify the lost satellite. Some experts also have speculated that the destroyed payload may have been a secret electronics communications satellite.

Last year, two-thirds of the Pentagon's most critical payloads traveled into space aboard the shuttle or the Titan. The shuttle appears to be grounded for at least a year, and all such launches aboard Titans will be canceled until Air Force investigators determine the cause of the failure, officials in Washington said yesterday.

"We have no other options available to us," said Maj. William Austin, an Air Force spokesman. "We're not going to launch any more until we find out what the hell caused this."

The civilian engineer here, who asked not to be identified in recounting his conversations with engineers on the Titan project, said the O-ring seals on the solid rocket booster joints were particularly suspect because only the two boosters strapped to the Titan were supposedly firing at the time of the explosion.

On the space shuttle, the liquid fuel rocket ignites first, followed by the two boosters as the shuttle lifts off its launch pad.

The Titan boosters, which are smaller but based on the same design as the shuttle boosters, provide the only thrust as the missile leaves the launch pad here. If the launch proceeds properly, the Martin Marietta Titan core vehicle's two aerojet liquid-fuel engines are ignited two minutes into the flight. Watkins said the missile exploded Friday "less than ten seconds after launch."

Richard Feynman, a member of the presidential commission on the Challenger, said the shuttle booster rockets were patterned after the Titan rockets, but later modified. The Titan boosters are made by United Technologies' Chemical Systems Division of Sunnyvale, Calif., officials here said.

The Titan explosion further aggravates a Defense Department launch problem that Air Force Secretary Edward C. Aldridge Jr. had called a "national emergency" because of the grounded shuttle, Pentagon officials and other experts said yesterday.

The explosion also may cripple the U.S. ability to monitor activities inside the Soviet Union, some space analysts said. Paul Stares, a military space expert at the Brookings Institution, said the national security implications may be so serious that President Reagan could be forced to order an emergency launch of the shuttle before design defects responsible for the Challenger accident are corrected.

Stares and Jeffrey Richelson, a military reconnaissance specialist at The American University, said the lost payload was probably a KH11 high-resolution photo reconnaissance satellite that is used to monitor arms control compliance and other developments inside the Soviet Union as well as troop movements in the Mideast and other trouble spots. "It's highly likely it was a KH11," said Richelson. "They are the only thing that has gone up from Vandenberg in the past that uses Titan 34Ds."

The Air Force reconnaissance system is designed to operate with two KH11s in orbit at a time, but only one is in space because its companion was destroyed in a Titan accident Aug. 28. The orbiting satellite is expected to remain operational only until mid- to late 1987, while the launch of its replacement, a KH12, has been delayed until the shuttle program restarts.

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In congressional testimony last week—before the Titan explosion complicated the picture—Aldridge said the launch of at least 10 Defense Department satellites would have to be delayed over the next year if the shuttle is grounded for 12 months, the minimum time the National Aeronautics and Space Administration says it will take to restart the program. If the shuttle remains grounded for two years or more, as some analysts have predicted, the backlog would grow to 21 "high priority" payloads, he said.

Watkins said Air Force Col. Nathaniel Lindsey has arrived here to head the investigative board. Watkins said it took "several months" for a board to compete its probe of another Titan 34D, which suffered a liquid-fuel engine shutdown about four minutes into a flight on August 28. That accident drew far less attention, even though it also meant the loss of a KH11 satellite, because it occurred far out of sight and before the shuttle disaster.

Watkins, 57, who directs all classified military launchings from this seaside base 150 miles northwest of Los Angeles, said Friday's explosion destroyed "several government vehicles and two trailers" next to Space Launch Complex 4, the site of the Titan launch. One Air Force officer said today the area still "looks like hell" as investigators have just begun to sift through wreckage looking for clues.

Devices to record wind speed and direction are located throughout the launch area, Watkins said, and the Titan rockets were ignited only when it was determined that the wind would not blow contaminants from any explosion toward populated areas. A large orange cloud of smoke and "missile fuel products" dispersed at sea after the explosion, he said.

Falling debris and fuel, however, ignited scattered fires on about 200 acres of brush, he said. Also, 74 base employes and two county sheriff's deputies were examined at a local hospital for possible eye or skin irritation. Three persons were admitted, Watkins said. Two were released Friday night and the third was released yesterday.

Staff writer Michael Isikoff contributed to this report in Washington.